public seminar

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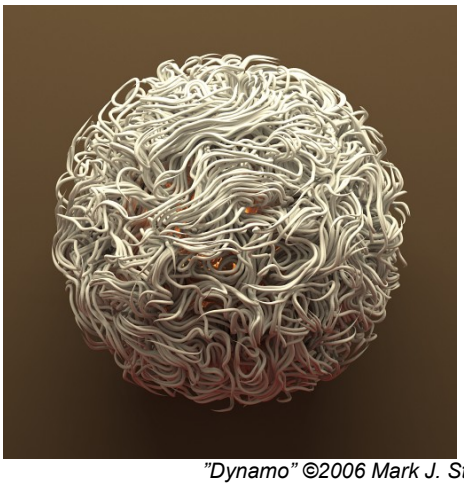
THE INFLUENCE OF VORTEXES

An LKL Maths-Art seminar
by Mark J. Stock
Thursday 9 September 2010,
6.00–7.30pm
London Knowledge Lab,
WC1N 3QS

Mark J. Stock is one in a long line of artists who has adapted emerging concepts and technologies from the field of fluid dynamics in order to understand the functions and movements of these phenomena through ephemeral media. He is drawn to the shapes, forms, and patterns of the flow of liquids and gases, collectively called "fluids." The formulas that describe fluid dynamics are straightforward, and originate with the mathematical description of the motion of individual molecules. Because these formulae are well-understood, they can be solved numerically on a computer. One method utilised to solve these equations consists of treating the fluid as small, individual particles of circulation (vortexes), each with a simple set of interaction rules. Each particle is given a position and properties, and then the algorithm evolves them in space and time.

Through this method, he is able to digitally mimic nature's tendency toward emergent phenomena. The end result is a digital description of the motion of a fluid, minus the extra perceptive clues that exist in nature. This presentation will cover these essential equations, the inspiration for using them, and the process he uses to create images of their isolated influence.



"Dynamo" ©2006 Mark J. Stock

Mark J. Stock is an artist, programmer, and scientist working in the space between visualisation, new media art, computational physics, and supercomputing. His work depicts scenes from the hidden world of fluid dynamics, and is created with custom software developed over the course of his scientific research. He was born in Michigan, USA, in 1973 and got his PhD in Aerospace Engineering at the University of Michigan in 2006. He has been producing art since 2000 and has had work in dozens of curated and juried exhibitions since 2002, including Ars Electronica and six SIGGRAPH Art Galleries. He currently lives in the Boston area and works for a small scientific research company in California.

All welcome. No registration or ticket required, but an email to lkl.maths.art@gmail.com is appreciated to assist with planning.

LKL Maths-Art seminar series

Website and archive: www.lkl.ac.uk/events/maths-art

This seminar is part of a regular series of maths-art seminars held at the London Knowledge Lab, on the second Thursday of each month from September to June. We also arrange special events from time to time. To receive email announcements about events, subscribe to the mailing list at: www.dcs.bbk.ac.uk/mailman/listinfo/lkl-maths-art .
We propose these seminars as explorations of the connections between "mathematics" and "art", where both terms are understood broadly: art implies visual art (painting, drawing, sculpture, computer graphics, video), architecture, music, textile art, literature/poetry (and others), and mathematics implies both mathematics as a discipline and the related disciplines in science and engineering for which mathematics is an essential means of expression and communication.

Next seminars: 16 September (special seminar), Mike Field, *The Art and Mathematics of Chaos – and how chaos can be (usefully) visualised*; 14 October, *speaker TBC*.

The seminar organisers are John Sharp and Phillip Kent. We welcome your suggestions about speakers or topics for future seminars; email us at lkl.maths.art@gmail.com .

Getting to the London Knowledge Lab

Nearest tube stations are: Holborn (Central, Piccadilly lines), Russell Square (Piccadilly line). Approximately 10-15 minutes walk from either station.